## REMARKS

Claim 59 has been cancelled. Thus, Claims 45 - 49, 51-52, 54- 55, 65, 66, 68 and 69 are now pending in the application. No new matter has been added. Applicants thank the Examiner for the allowance of claims 45-47. In view of the above amendments and the following remarks, it is respectfully submitted that all of the presently pending claims are allowable. Applicants would like to note that the only amendment made was the cancellation of claim 59.

The objection to claim 59 is moot as claim 59 has been cancelled.

Claims 52, 55 and 65 stand rejected under 35 U.S.C. § 102(b) as anticipated by U.S. Patent No. 5,357,957 to Itil et al. ("Itil"). 12/1/06 Office Action, p. 2. Applicants do not understand why the Examiner has asserted that Itil anticipates claim 52, since later in the Office Action, in connection with the rejection of claim 48, the Examiner admits that Itil does not teach an audible warning indication of brain dysfunction, which is one of the limitations of claim 52. *Id.* at p. 4. Indeed, the Examiner does not even address this audible warning limitation in the rejection of claim 52. Thus, since the Examiner admits that the audible warning limitation of claim 52 is missing from Itil, it is respectfully requested that the Examiner should withdraw the 35 U.S.C. § 102(b) rejection of claim 52 and all depending claims (claims 55 and 65).

Claims 48, 49, 51 and 68 stand rejected under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent No. 5,241,967 to Yasushi et al. ("Yasushi") in view of U.S. Patent No. 5,279,305 to Zimmerman et al. ("Zimmerman") and U.S. Patent No. 6,001,065 to DeVito ("DeVito"). The Examiner states that Yasushi shows a device having an active electrode, a filter, and a tone generator for producing an audio output but does not disclose or suggest a radio transmitter or a connection means. The Examiner states that these elements are shown in Zimmerman and DeVito, respectively.

Claim 48 recites, in relevant part, a medical system including "a selectively adjustable filter separating a frequency band from a group of frequency bands in the brain wave broadcast signal to generate a frequency band signal" and a "sound generator coupled to the receiver, the sound generator converting the frequency band signal into a sound, corresponding to the analog brain waves."

In contrast, Yasushi describes a system for evoking a desired brain wave from a subject by utilizing a bandpass filter 4 which "passes only a signal corresponding to a brain wave desired to be evoked." Yasushi, col. 6, lines 7-8. Yasushi teaches only that the filter 4 may be set for a single brain wave frequency band, e.g., only alpha, only theta or only beta. *Id.* The Examiner asserts that the passband filter is selected and therefore adjusted based on the desired band to be evoked. 12/1/06 Office Action, p. 6. Applicants respectfully disagree with the Examiner's interpretation of Yasushi. Claim 48 specifically recites a selectively adjustable filter. That is, the filter of claim 48 may be adjusted to separate a frequency band. In Yasushi, however, if a user desires to evoke a second brain wave frequency band, the bandpass filter of Yasushi determining a first brain wave frequency band must be swapped with the bandpass filter determining the second brain wave frequency band because the Yasushi filter is not adjustable. Therefore, in order for different brain wave frequencies to be detected, multiple filters are required. As disclosed in Yasushi, "the bandpass filter 4 can be *replaced* with a low-pass filter allowing to pass the EEG signal having a frequency lower than 7Hz. It would be apparent that a high-pass filter can also be employed *in lieu* of the bandpass filter 4 depending upon the filtering characteristic imposed to the biological signal amplifier." Yasushi, col. 7, ll. 35-41. Thus, it is respectfully submitted that Yasushi does not disclose or suggest "*a selectively adjustable filter separating a frequency band from a group of frequency bands in the brain wave broadcast signal to generate a frequency band signal*" and a "*sound generator coupled to the receiver, the sound generator converting the frequency band signal into a sound, corresponding to the analog brain waves*" as recited in claim 48.

It is respectfully submitted that neither Zimmerman nor DeVito cures the above-described deficiencies of Yasushi. Zimmerman describes a transmitter 12 which is electrically connected to a plurality of electrodes 16 coupled to the patient's head. Radio frequency transmissions of the electrical signals generated by the electrodes 16 are transmitted to a receiver 14 which displays the signal from each electrode 16 on a display terminal. Zimmerman, col. 8, lines 28-41. No where does Zimmerman disclose or suggest filtering or displaying a frequency band selected from a group of frequency bands in the electrical signals from the electrodes 16.

DeVito describes a system for sensing and converting EEG signals into game-play commands. DeVito, col. 4, lines 35-49. Electrical signals generated by electrodes 23-25 are transmitted by a transmitter 30 in a headband 20 to a receiver 40, which performs numerous Fast Fourier Transforms on the signals. *Id.* While DeVito describes the use of a frequency filter for determining a power level within a preselected frequency band, the filter is not "selectively

adjustable." In fact, the frequency filter extracts one particular frequency band from the electrical signals and discards the remaining portions. *Id.* at col. 8, lines 13-23. Thus, DeVito teaches away from the present invention by discarding non-selected frequency bands.

Therefore, applicants respectfully submit that neither Yasushi nor Zimmerman nor DeVito, either alone or in combination, discloses or suggests "*a selectively adjustable filter separating one of a single frequency band and a group of frequency bands from a brain wave frequency spectrum represented by the brain wave broadcast signal to generate a frequency band signal*" and a "*sound generator coupled to the receiver, the sound generator converting the frequency band signal into a sound, corresponding to the analog brain waves*" as recited in claim 48. Because claims 49 and 51 depend from, and, therefore include all of the limitations of claim 48, it is respectfully submitted that these claims are also allowable.

Claim 68 recites limitations substantially similar to claim 48 including "selectively separating one of a single frequency band and a group of frequency bands from a brain wave frequency spectrum represented by the brain wave broadcast signal to generate a frequency band signal" and "generating a sound based on the frequency band signal using the hand-held receiver." Thus, it is respectfully submitted that claim 68 is also allowable for at least the same reasons stated above in regard to claim 48.

Claims 48, 49, 51, 52, 55, 65, and 68 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Itil in view of U.S. Patent No. 4,454,886 to Lee ("Lee") and U.S. Patent No. 3,807,387 to MacNichol Jr. ("MacNichol"). The Examiner states that Itil discloses the invention as claimed except for an audible output and determination of brain dysfunction, but that this feature is disclosed in Lee and MacNichol, respectively.

As noted above and correctly recognized by the Examiner, Itil neither discloses or suggests a "sound generator coupled to the receiver, the sound generator converting the frequency band signal into a sound, corresponding to the analog brain waves." As recited in claim 48, the frequency band signal is a single frequency band or a group of frequency bands selectively filtered from a brain wave frequency spectrum in a brain wave broadcast signal. It is respectfully submitted that Lee does not cure the deficiencies of Itil.

Lee describes a method for generating a sound output signal 24 from brain waves of a patient. Each electrical signal generated by an electrode 14 is passed through a band-pass filter to

exclude noise lying outside of a brain wave frequency band, e.g., 1-50Hz. The sound output signal 24 is a single signal which corresponds to the brainwaves for the entire brain wave frequency band. Thus, the sound output signal 24 does not represent the brainwaves of the patient in a particular frequency band (e.g., theta) or group of frequency bands (e.g., theta, alpha) selectively filtered from the brain wave frequency spectrum, as recited in the present invention. Thus, it is respectfully submitted that Lee does not disclose or suggest "*a selectively adjustable filter separating one of a single frequency band and a group of frequency bands from a brain wave frequency spectrum represented by the brain wave broadcast signal to generate a frequency band signal*" and a "*sound generator coupled to the receiver, the sound generator converting the frequency band signal into a sound, corresponding to the analog brain waves*" as recited in claim 48. Because claims 49 and 51 depend from, and, therefore include all of the limitations of claim 48, it is respectfully submitted that these claims are also allowable.

Claim 68 recites limitations substantially similar to claim 48 including "selectively separating one of a single frequency band and a group of frequency bands from a brain wave frequency spectrum represented by the brain wave broadcast signal to generate a frequency band signal" and "generating a sound based on the frequency band signal using the hand-held receiver." Thus, it is respectfully submitted that claim 68 is also allowable for at least the same reasons stated above in regard to claim 48.

Claim 52 recites limitations substantially similar to claim 48 including "a selectively adjustable filter separating one of a single frequency band and a group of frequency bands from a brain wave frequency spectrum represented by the brain wave broadcast signal to generate a frequency band signal" and "an output device generating an output signal based on the frequency band signal for analysis by an operator to determine the existence of brain dysfunction." Thus, it is respectfully submitted that claim 52 is also allowable for at least the same reasons stated above in regard to claim 48. Because claims 55 and 65 depend from, and, therefore include all of the limitations of claim 52, it is respectfully submitted that these claims are also allowable.

As noted above and correctly recognized by the Examiner, Itil also neither discloses or suggests a "a processor analyzing the frequency band signal to determine the existence of brain dysfunction, wherein the output device generates an audible warning signal when the analysis of the frequency band signal is indicative of brain dysfunction." As recited in claim 52, the system comprises a processor that determines the existence of brain dysfunction. It is respectfully submitted that MacNichol does not cure the deficiencies of Itil.

Itil describes an EEG headset having multiple electrode assemblies that output electrical signals to a D-connector mounted on the headset. The D-connector is coupled to signal-conditioning hardware which includes "[a] CRT display...for display of selection parameters or the input signals for monitoring purposes." Itil, col. 6, ll. 6-8. The signal conditioning hardware does not determine whether the electrical signals from the electrode assemblies are indicative of brain dysfunction, and, as a result, the CRT display cannot display a warning signal indicative of brain dysfunction.

MacNichol describes a monitoring system substantially similar to that described in Itil. Specifically, MacNichol is primarily concerned with detecting the low threshold value associated with cerebral death. Initially, Applicants respectfully submit that the Examiner improperly equated cerebral death with brain dysfunction. Specifically, those skilled in the art understand that brain dysfunction may cause cerebral death, but a brain dysfunction is not cerebral death. Furthermore, cerebral death is a condition where a patient's brain is no longer functioning whereas brain dysfunction is a condition where a patient's brain is functioning improperly. Therefore, readings and outputs generated to detect brain dysfunction and cerebral death are markedly different since MacNichol explicitly describes the conditions with which cerebral death exist.

In addition, MacNichol merely detects brain wave signals but does not perform a subsequent determination, particularly when a brain dysfunction exists. Both MacNichol and Itil receive the detected brain wave signals and displays the results to a user for monitoring purposes. Accordingly, it is respectfully submitted that neither Itil nor MacNichol, either alone or in combination, discloses or suggests "a processor analyzing the frequency band signal to determine the existence of brain injury, wherein the output device generates an audible warning signal when the analysis of the frequency band signal is indicative of brain dysfunction," as recited in claim 52. Thus, it is respectfully submitted that claim 52 is also allowable for at least these additional reasons. Because claims 55 and 65 depend from, and, therefore include all of the limitations of claim 52, it is respectfully submitted that these claims are also allowable.

Claims 54 and 66 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Itil in view of MacNichol, Lee, and Zimmerman. It is respectfully submitted that Zimmerman also does not disclose or suggest "a selectively adjustable filter separating one of a single frequency band and a group of frequency bands from a brain wave frequency spectrum represented by the brain wave broadcast signal to generate a frequency band signal," "an output device generating

an output signal based on the frequency band signal for analysis by an operator to determine the existence of brain dysfunction," and "a processor analyzing the frequency band signal to determine the existence of brain injury, wherein the output device generates an audible warning signal when the analysis of the frequency band signal is indicative of brain dysfunction," as recited in claim 52. Thus, it is respectfully submitted that neither Itil, MacNichol, Lee, nor Zimmerman, either alone or in combination disclose the above recitation of claim 52. Accordingly, because claims 54 and 66 depend from, and, therefore include all of the limitations of claim 52, it is respectfully submitted that these claims are also allowable.

Claim 69 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Itil in view of MacNichol and Lee and in further view of U.S. Patent No. 4,454,886 to John. It is respectfully submitted that John does not disclose or suggest "selectively separating one of a single frequency band and a group of frequency bands from a brain wave frequency spectrum represented by the brain wave broadcast signal to generate a frequency band signal" and "generating a sound based on the frequency band signal using the hand-held receiver." as recited in claim 68. Thus, it is respectfully submitted that neither Itil, MacNichol, Lee, nor John, either alone or in combination, disclose or suggest the above recitation of claim 68. Accordingly, because claim 69 depends from, and, therefore includes all of the limitations of claim 68, it is respectfully submitted that this claim is also allowable.

## CONCLUSION

It is therefore respectfully submitted that all of the pending claims are allowable. All issues raised by the Examiner having been addressed, an early and favorable action on the merits is earnestly solicited.

Respectfully submitted,

Dated: January 31, 2007

By: _____
Oleg F. Kaplun (Reg. No. 45,559)

Fay Kaplun & Marcin, LLP
150 Broadway, Suite 702
New York, NY 10038
Tel: (212) 619-6000
Fax: (212) 619-0276